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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/820,416

Applicant(s)

ENDLER ET AL.

Examiner

Blaine Basom

Art Unit

2173

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-11, 26-28, 30, 32-35, 37-40 and 42-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-11, 26-28, 30, 32-35, 37-40 and 42-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The Office Action is responsive to the Applicants' amendments and arguments received on July 12, 2009.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 11, the claim limitations reciting "means for displaying..." "means for simultaneously displaying..." and "means for scrolling..." are means plus function limitations that invoke 35 U.S.C. 112, sixth paragraph. However, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed functions such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 6, 9, 10, 11, 30, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,628,313 to Minakuchi et al. (hereafter "Minakuchi") and U.S. Patent Application Publication No. 2004/0001111 to Fitzmaurice et al. (hereafter

“Fitzmaurice”), as supported by “Merriam Webster’s Collegiate Dictionary, Tenth Edition” (hereinafter “Webster”).

Regarding claims 1 and 11, Minakuchi describes an information retrieval method and system in which main information, specified by the user, is displayed along with sub-information related to the main information (see e.g. column 2, line 65 – column 3, line 21). Minakuchi particularly discloses that the main information and its associated sub-information are presented via a “virtual sphere” (see e.g. column 8, line 63 – column 9, line 14; and FIG. 5). Like claimed, Minakuchi discloses: means for displaying a first content (i.e. “main information”) on a flat display surface within a spherical display, i.e. virtual sphere (see e.g. column 2, line 65 – column 3, line 12; column 8, line 63 – column 9, line 14; and reference number 201 in FIG. 5); means for simultaneously displaying a second content (i.e. “sub-information”) on an outside surface of the spherical display, i.e. virtual sphere, wherein the spherical display surface is convex (see e.g. column 2, line 65 – column 3, line 21; column 8, line 63 – column 9, line 14; and reference number 203 in FIG. 5); and means for scrolling through one of the first content and the second content (e.g. “rotating” the spherical display surface to scroll through the sub-information) based on instructions while displaying the other one of the first content and the second content (see e.g. column 9, lines 1-14), wherein the spherical display surface is imposed over the flat display surface such that the first content and the second content are distinctly and simultaneously viewed (see e.g. FIG. 5). Minakuchi further discloses that a “memory device” stores the first content, and further suggests that the memory device is in direct physical communication with a housing comprising the display device (see e.g. column 2, line 65 – column 3, line 20; and column 5, line 25 – column 6, line 4). A commonly understood definition of “capture,” with

respect to the art, is “to record in a permanent file (as in a computer)” (see e.g. the definition of “capture” provided by Webster). The memory device of Minakuchi is thus considered a “content capturing device,” given the broadest, most reasonable definition of such a device; the memory device of Minakuchi is used for capturing content, i.e. recording content in a permanent file. Accordingly, Minakuchi further teaches capturing the first content with a content capturing device (i.e. a memory device), as is claimed. Minakuchi thereby teaches a method and system similar to that recited in claims 1 and 11, respectively. Minakuchi, however, does not explicitly disclose that the second content (i.e. the sub-information displayed on the outside surface of the “virtual sphere”) is displayed on an outside surface of a *physical* spherical display surface, wherein the spherical display surface is convex, as is recited in claim 1. Nevertheless, such physical spherical displays are known in the art.

For example, Fitzmaurice demonstrates displaying content via a volumetric display, which can take the form of a physical spherical display (see e.g. paragraph 0024, and FIG. 1). Fitzmaurice further teaches displaying first content on a flat display surface within the spherical display and second content on an outside surface of a physical spherical display surface of the spherical display, wherein the spherical display surface is convex (see e.g. paragraphs 0012-0014; paragraph 0025; paragraph 0027; and FIG. 2).

It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi and Fitzmaurice before him at the time the invention was made, to implement the information retrieval method of Minakuchi on the volumetric display of Fitzmaurice, i.e. to display the first content on a flat display surface within the volumetric display and to simultaneously display the second content on an outside surface of a physical display surface of

the volumetric display. It would have been advantageous to one of ordinary skill to utilize this combination because such a volumetric display allows a user to have a *true* three-dimensional view of the content, as is taught by Fitzmaurice (see e.g. paragraph 0024). Accordingly, Minakuchi and Fitzmaurice teach a method and system like that of claims 1 and 11, respectively.

As per claim 2, Minakuchi further teaches storing the first content (i.e. “main information”) and the second content (i.e. “sub-information”) in a storage device (see e.g. column 2, line 65 – column 3, line 12; and column 5, lines 56-58).

As per claim 6, Minakuchi suggests that the above-described method and system can be applied to search through pictures (see e.g. column 1, line 64 – column 2, line 35). Minakuchi suggests that the second content (i.e. the “sub-information”) comprises a plurality of icons or thumbnails representative of such pictures from which the user may select (see e.g. FIGS. 5-7; column 6, lines 33-40; column 9, lines 1-14; and column 9, lines 34-58). In such situations, the second content is one of a video stream and digital image, like claimed.

Concerning claim 9, Minakuchi demonstrates that the second content (i.e. the “sub-information”) comprises a plurality of icons or thumbnails from which the user may select (see e.g. FIGS. 5-7; column 6, lines 33-40; column 9, lines 1-14; and column 9, lines 34-58). The second content described by Minakuchi is thus considered “menu information” like claimed.

With respect to claim 10, Minakuchi demonstrates that the spherical display surface displays the second content (i.e. the “sub-information”) in a three dimensional viewpoint (see e.g. column 8, lines 63-67; and reference number 203 in FIG 5). Fitzmaurice similarly suggests that the *physical* spherical display surface displays content in a three dimensional viewpoint (see e.g. paragraphs 0012-0014 and FIG. 2).

As per claims 30 and 35, Fitzmaurice demonstrates that the spherical display is semi-spherically shaped, wherein the spherical display surface substantially spans the semi-spherical shape of the spherical display and the flat display surface is coupled to the physical spherical display surface and spans a diameter of the physical spherical display surface (see e.g. paragraph 0025 and FIG. 2).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, and Webster, which is described above, and also over U.S. Patent No. 7,107,516 to Anderson et al. (hereafter “Anderson”).

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1, used for searching for information, in which first content provided by a content capture device is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Minakuchi suggests that such content can comprise pictures, as is described above (see e.g. the rejection for claim 6). Minakuchi, however, discloses that the content capture device providing the content is a memory device (see e.g. the rejection for claim 1), and not a digital camera as required in claim 4.

Nevertheless, providing content (i.e. pictures) from a digital camera that is in direct physical communication with a display device is well known in the art. For example, Anderson demonstrates directly coupling a display device to a digital camera for the purpose of viewing and searching content captured by the camera (see e.g. column 2, lines 30-51; and column 4, lines 19-44).

Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, and Anderson before him at the time the invention was made, to couple a camera to the spherical display of Minakuchi and Fitzmaurice, since this would allow the user to view on the display content captured by the user, as is demonstrated by Anderson. Minakuchi, Fitzmaurice, Webster, and Anderson, in combination, are thus considered to teach a method like that of claim 4.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Anderson, and Webster, as is described above, and also over PCT Publication No. WO 02/21529 to Barbieri.

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Anderson further teaches directly coupling a content capture device (i.e. a digital camera) to the spherical display for the purpose of searching through and displaying images captured by the content capture device, as is described above (see the rejection for claim 4). Minakuchi, Fitzmaurice, Webster, and Anderson, however, do not explicitly disclose that the content capturing device is a video camera, like recited in claims 5. Nevertheless, capturing video streams with a video camera, and then searching through the captured information is well known in the art.

For example, Barbieri teaches displaying a digital video image (considered analogous to the “main information” of Minakuchi) and determining similar video images (considered

analogous to the “sub-information” of Minakuchi) that are associated with the video image (see e.g. page 2, lines 11-34). Such digital video images are necessarily taken with a content capturing device, i.e. a digital video camera, as is well-known in the art (see e.g. page 9, lines 31-34 of Barbieri).

Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri before him at the time the invention was made, to apply the spherical display of Minakuchi and Fitzmaurice to search for particular video images within a video stream captured by a digital video camera, like taught by Barbieri. That is, it would have been obvious to modify the spherical display of Minakuchi and Fitzmaurice such that the main information (i.e. the first content) is a video image, which has been captured by a content capturing device, i.e. a digital video camera. It would have been advantageous to one of ordinary skill to apply the interface of Minakuchi to search video, because video search functionality is becoming useful due to the increase of multimedia data that can be stored in home devices, as is taught by Barbieri (see e.g. page 1). Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, in combination, are thus considered to teach a method like that of claim 5.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, and Webster, as is described above, and also over U.S. Patent Application Publication No. 2002/0030665 to Ano.

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1, used for searching for information, in which first content is displayed on a flat surface

within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. This second content is scrolled in response to instructions based on an input device, e.g. a trackball (see e.g. paragraph 0082). As such, Minakuchi does not explicitly disclose that these instructions for scrolling are based on rotating a playback ring or knob, as is expressed in claims 7-8.

Nevertheless playback rings and knobs are well-known types of input devices used for scrolling displayed information. For example, Ano describes a playback ring (i.e. a “wheel”), considered a type of knob, which is used in conjunction with, e.g. a trackball, to scroll through content displayed on a screen (see e.g. paragraphs 0005, 0009, and 0098-0101).

It would have therefore been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, and Ano before him at the time the invention was made, to apply the playback ring of Ano to scroll through the displayed content of Minakuchi and Fitzmaurice, i.e. to rotate the spherical display. It would have been advantageous to one of ordinary skill to use such a playback ring, because it allows the user to more efficiently scroll through content, as is demonstrated by Ano (see e.g. paragraphs 0006-0009). Minakuchi, Fitzmaurice, Webster, and Ano, in combination, are thus considered to teach methods like recited in claims 7 and 8.

Claims 32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, which is described above (i.e. in the rejection for claim 5).

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1 and a system like that of claim 11, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Barbieri particularly teaches that the first content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri, however, do not explicitly teach controlling at least one of the direction and speed of such a video stream, as is required by claims 32 and 37. Nevertheless providing users the ability to control the direction and speed of playback of a video stream (by e.g. fast forward, reverse, etc. functions) is notoriously well known in the art. The Examiner takes OFFICIAL NOTICE of this teaching. Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Fitzmaurice, Anderson, and Barbieri before him at the time the invention was made, to allow a viewer watching the first content (e.g. a video stream) displayed by the spherical display of Minakuchi, Fitzmaurice, Anderson, and Barbieri to change the direction or speed of playback of the content, like known in the art. It would have been advantageous to one of ordinary skill to apply this modification because it allows the user to, for example, skip over parts of the content (i.e. by fast forward operations) that are not interesting to the user, as is known in the art. Minakuchi, Fitzmaurice,

Webster, Anderson, and Barbieri are thus considered to further teach - to one of ordinary skill in the art - a method and system like that of claims 32 and 37, respectively.

Claims 33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, which is described above (i.e. in the rejection for claim 5), and also over U.S. Patent Application Publication No. 2004/0264579 to Bhatia et al. (hereafter “Bhatia”).

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1 and a system like that of claim 11, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Barbieri particularly teaches that the first content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri, however, do not explicitly disclose that multiple video feeds are simultaneously displayed, as is required by claims 33 and 38. Nevertheless, simultaneously displayed multiple video feeds are well known in the art. For example, Bhatia demonstrates a method for simultaneously displaying a plurality of video streams (see e.g. paragraphs 0011-0014). It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Barbieri, Anderson, and Bhatia before him at the time the invention was made, to apply the display of Minakuchi, Fitzmaurice, Anderson, and Barbieri to simultaneously display a plurality of video feeds, because it is a useful feature in video presentation systems, as taught by Bhatia (see e.g. paragraphs 0004-007). Minakuchi,

Fitzmaurice, Webster, Anderson, Barbieri, and Bhatia, in combination, are thus considered to teach a method and system like that of claims 33 and 38, respectively.

Claims 34 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, which is described above (i.e. in the rejection for claim 5), and also over U.S. Patent Application Publication No. 2003/0146915 to Brook et al. (hereafter “Brook”).

As described above, Minakuchi, Webster, and Fitzmaurice teach a method like that of claim 1 and a system like that of claim 11, used for searching for information, in which first content is displayed on a flat surface within a spherical display and second content is displayed on an outside surface of a physical spherical display surface of the spherical display. Barbieri particularly teaches that the first content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri, however, do not explicitly disclose that the spherical display is configured to apply special effects (i.e. sepia tone, black and white tone, and/or slow shutter effect) to a portion of this content, as is required by claims 34 and 39. Nevertheless applying such special effects to video is well known in the art. For example, Brook demonstrates applying sepia tone and black and white special effects (see e.g. paragraph 0186). It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Brook before him at the time the invention was made, to modify the display of Minakuchi, Fitzmaurice, Anderson, and Barbieri to apply special effects to the content, like taught by Brook. It would have been advantageous to one of ordinary

skill to apply this modification because it allows the user to, for example, change to appearance of the content to suit his or her taste, as is demonstrated by Brook. Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Brook, in combination, are thus considered to teach a method and system like that of claims 34 and 39, respectively.

Claims 26-28 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, and Barbieri, which is described above (i.e. in the rejection for claim 5), and also over the teachings of Ano, which are also described above.

Specifically regarding claim 26, Minakuchi describes a spherical display for simultaneously displaying first content and second content, wherein the spherical display is convex, wherein the second content is displayed on the outside surface of the spherical display, and wherein the first and second content are stored in a storage module, as is described above (see e.g. the rejection for claim 1). Minakuchi suggests that the second content (i.e. the “sub-information”) can comprise a plurality of icons or thumbnails representative of pictures from which the user may select (see e.g. FIGS. 5-7; column 6, lines 33-40; column 9, lines 1-14; and column 9, lines 34-58). Such second content is thus a menu comprising a plurality of images, i.e. Minakuchi teaches simultaneously displaying image and menu information on an outside surface of a spherical display. Fitzmaurice teaches displaying such content on a *physical* spherical display, wherein the physical spherical display is convex, and wherein content is displayed on the outside surface of the spherical display, as is described above (see e.g. the rejection for claim 1). Also, Barbieri teaches applying such an interface to search for video content, i.e. such that

the second content includes a video content, as is also described above (see e.g. the rejection for claim 5). Anderson teaches directly coupling a content capture device to the spherical display for the purpose of searching a displaying images captured by the content capture device (see e.g. the rejection for claim 4). Accordingly, the above-described combination of Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri teach a device similar to that of claim 26, which comprises: a content capturing device for capturing first content (i.e. video); a physical spherical display for simultaneously image (i.e. video) and menu information wherein the physical spherical display is convex, and wherein the video and menu information is displayed on the outside surface of the spherical display; and a storage module to store the first content and second content. Minakuchi discloses that this second content is scrolled (i.e. the spherical display is rotated) in response to instructions based on an input device, e.g. a trackball, as is described above. As such, Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri do not explicitly discloses that these instructions for scrolling are based on rotating a playback ring, as is expressed in claim 26. Nevertheless playback rings are well-known types of input devices used for scrolling displayed information. For example, Ano describes a playback ring (i.e. a “wheel”), which is used in conjunction with, e.g. a trackball, to scroll through content displayed on a screen (see e.g. paragraphs 0005, 0009, and 0098-0101). It would have therefore been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Barbieri, Anderson, Fitzmaurice, and Ano before him at the time the invention was made, to apply the playback ring of Ano to scroll through the displayed content of Minakuchi and Barbieri, i.e. to rotate the spherical display. It would have been advantageous to one of ordinary skill to use such a playback ring, because it allows the user to more efficiently scroll through content, as is

demonstrated by Ano (see e.g. paragraphs 0006-0009). Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano are thus considered to teach – to one of ordinary skill in the art – a device like that of claim 26.

As per claim 27, Minakuchi demonstrates displaying the second content, i.e. menu information, with a three dimensional effect to distinguish it from other content (see e.g. FIG. 5). Barbieri teaches that such content could include a video stream (see e.g. the rejection for claim 5). Accordingly, the combination of Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano described in the previous paragraph is further considered to teach a device like that of claim 27.

Concerning claim 28, Minakuchi demonstrates displaying the second content, i.e. menu information, overlaid on top of other content (see e.g. FIG. 5). Barbieri teaches that such content could include a video stream (see e.g. the rejection for claim 5). Accordingly, the above-described combination of Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano is further considered to teach a device like that of claim 28.

As per claim 40, Fitzmaurice demonstrates that the display surface is semi-spherically shaped, wherein the display surface substantially spans the semi-spherical shape of the physical display and the flat display surface is coupled to the physical display and spans a diameter of the physical display (see e.g. paragraph 0025 and FIG. 2).

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano, which is described above.

As described above, Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano teach a device like that of claim 26, used for searching for information, in which content is displayed on the outside surface of a spherical display. Barbieri particularly teaches that the content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano, however, do not explicitly teach controlling at least one of the direction and speed of such a video stream, as is required by claim 42. Nevertheless proving users the ability to control the direction and speed of playback of a video stream (by e.g. fast forward, reverse, etc. functions) is notoriously well known in the art. The Examiner takes OFFICIAL NOTICE of this teaching. Accordingly, it would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano before him at the time the invention was made, to allow a viewer watching the content (e.g. a video stream) displayed by the spherical display of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano to change the direction or speed of playback of the content, like known in the art. It would have been advantageous to one of ordinary skill to apply this modification because it allows the user to, for example, skip over parts of the content (i.e. by fast forward operations) that are not interesting to the user, as is known in the art. Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano are thus further considered to teach – to one of ordinary skill in the art – a device like that of claim 42.

Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano, which is

described above, and also over U.S. Patent Application Publication No. 2004/0264579 to Bhatia et al. (hereafter “Bhatia”).

As described above, Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano teach a device like that of claim 26, used for searching for information, in which content is displayed on the outside surface of a physical display. Barbieri particularly teaches that the content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 5). Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano, however, do not explicitly disclose that multiple video feeds are simultaneously displayed, as is required by claim 43. Nevertheless, simultaneously displayed multiple video feeds are well known in the art. For example, Bhatia demonstrates a method for simultaneously displaying a plurality of video streams (see e.g. paragraphs 0011-0014). It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Bhatia before him at the time the invention was made, to apply the physical display of Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano to simultaneously display a plurality of video feeds, because it is a useful feature in video presentation systems, as taught by Bhatia (see e.g. paragraphs 0004-0007). Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Bhatia are thus considered to teach – to one of ordinary skill in the art – a device like that of claim 43.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Minakuchi, Fitzmaurice, Webster, Anderson, Barbieri, and Ano, which is

described above, and also over U.S. Patent Application Publication No. 2003/0146915 to Brook et al. (hereafter “Brook”).

As described above, Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri and Ano teach a device like that of claim 26, used for searching for information, in which content is displayed on the outside surface of a physical spherical display. Barbieri particularly teaches that the content can be a video stream or digital image captured with a content capturing device, as is described above (see e.g. the rejection for claim 3). Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano, however, do not explicitly disclose that the physical spherical display is configured to apply special effects (i.e. sepia tone, black and white tone, and/or slow shutter effect) to a portion of this content, as is required by claim 44. Nevertheless applying such special effects to video is well known in the art. For example, Brook demonstrates applying sepia tone and black and white special effects (see e.g. paragraph 0186). It would have been obvious to one of ordinary skill in the art, having the teachings of Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Brook before him at the time the invention was made, to modify the display of Minakuchi, Fitzmaurice, Anderson, Barbieri, and Ano to apply special effects to the content, like taught by Brook. It would have been advantageous to one of ordinary skill to apply this modification because it allows the user to, for example, change to appearance of the content to suit his or her taste, as is demonstrated by Brook. Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Brook are thus considered to teach – to one of ordinary skill in the art – a device like that of claim 44.

Response to Arguments

Claim Rejections - 35 U.S.C. §112

The Examiner acknowledges the Applicants' amendments to claims 11, 26, and 40. In light of these amendments, the 35 U.S.C. §112, first paragraph, rejections presented in the previous Office Action to claims 27 and 28 are respectfully withdrawn, as is the 35 U.S.C. §112, second paragraph, rejection presented in the previous Office Action to claim 40.

Regarding the 35 U.S.C. §112, second paragraph, rejection to claim 11, the Applicants argue that paragraphs 0030 and 0046 of the published application clearly links or associates the limitations of claim 11 reciting "means for displaying...", "means for simultaneously displaying...", and "means for scrolling..." to the claimed functions such that one of ordinary skill in the art would recognize what structure, material or acts perform the claimed function.

The Examiner, however, respectfully disagrees. Paragraph 0030 discloses a "control module," a "rendering module," a "content capturing module," a "storage module," an "interface module," and a "content detection module:"

In one embodiment, the control module 350 communicates with the rendering module 310, the content capture module 320, the storage module 330, the interface module 340, and the content detection module 360. In one embodiment, the control module 350 coordinates tasks, requests, and communications between the rendering module 310, the content capture module 320, the storage module 330, the interface module 340, and the content detection module 360.
(Published Application No. 2002/0001920, paragraph 0030).

Paragraph 0046 discloses a "spherical display," a "playback ring," and a "control knob:"

In one embodiment, the main housing 505 includes a spherical display 520, a control knob 525, and a playback ring 530. In one embodiment, the spherical display 520 is configured to simultaneously display video/image content and functional menu driven content. In one embodiment, the spherical display 520 is configured to simultaneously display multiple video feeds. (Published Application No. 2002/0001920, paragraph 0046).

However, it is unclear as to which one or more of the “control module,” “rendering module,” “content capturing module,” “storage module,” “interface module,” “content detection module,” and “spherical display” constitutes the claimed “means for displaying...” and the claimed “means for simultaneously displaying...”. Also, it is unclear as to whether the “playback ring,” “control knob,” or e.g. the “rendering module” could be considered “means for scrolling through one of the first and the second content based on instructions...” like claimed. The Examiner therefore respectfully maintains the 35 U.S.C. §112, second paragraph, rejection to claim 11.

Claim Rejections - 35 U.S.C. §103

Regarding the 35 U.S.C. §103 rejection to claims 1, 2, 6, 9, 10, 11, 30, and 35, the Applicants argue that Minakuchi, Webster, and particularly Fitzmaurice fail to teach “simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex,” as is claimed. The Applicants particularly submit that Fitzmaurice describes a volumetric display allowing the user to have a true three-dimensional view of a scene, where both the scene and widgets are displayed inside an enclosure and within the volumetric display. The Applicants further submit that

Fitzmaurice specifically states, "plac[ing] the 2D widgets 30 and 32 on the inside surface of the volumetric display enclosure 34," and positioning widgets "within a volumetric display" and "in a volumetric display."

In response, the Examiner respectfully asserts that, semantics aside, Fitzmaurice nevertheless teaches to one of ordinary skill in the art "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex." The Examiner notes that specification of the instant application does not explicitly disclose "displaying a second content on an outside surface of a physical spherical display surface," and in fact discloses "simultaneously display[ing] a second content on a spherical display surface within the spherical display" (Abstract, emphasis added). Just as the specification though would nevertheless support a teaching of "simultaneously displaying a second content on an outside surface of a physical spherical display surface," so to would Fitzmaurice's disclosure that "[i]t is an aspect of the present invention to place the widgets on an outside surface of a volumetric display inside a protective enclosure" (paragraph 0012).

Regardless of the fact that the widgets are within an enclosure, they are still presented on an outside display surface. Fitzmaurice discloses, for example, that:

The widgets are placed on the shell or outer edge of a volumetric display, in a ring around the outside bottom of the display, in a plane within the display and/or at the users focus of attention. Virtual 2D widgets are mapped to volumetric display voxels and control actions in the 3D volume are mapped to controls of the widgets. (Paragraph 0014, emphasis added).

Fitzmaurice further discloses that,

The voxels within the display can be arranged in a number of different ways as depicted in FIGS. 6A and 6B where FIG. 6A shows concentric layers 90 and 92 of voxels and FIG. 6B shows rectilinearly stacked layers 94, 96, 98 and 100 of voxels. In these examples voxels 102, 104, 106, 108 and 110 and voxels 112, 114, 116, 118 and 120 are surface voxels that might be used for part of a 2D widget displayed on the outside surface of the display inside the enclosure. (Paragraph 0027, emphasis added).

As asserted by the Applicants, Fitzmaurice discloses placing widgets on an inside surface of a volumetric display enclosure, but the fact that the widgets are inside an enclosure does not preclude them from being on an outside surface a physical spherical display. As admitted by the Applicants (see page 10 of Applicants "REMARKS") the enclosure is in fact not part of the display and is instead a "protective enclosure." Because the enclosure is not part of the display, the fact that the widgets are within the enclosure does not negate the fact that they are on an outside surface of a physical spherical display. Accordingly, the Examiner respectfully maintains that Fitzmaurice teaches simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner therefore respectfully maintains the 35 U.S.C. §103 rejection to claims 1, 2, 6, 9, 10, 11, 30, and 35.

Regarding claim 4, the Applicants argue that Minakuchi, Webster, Fitzmaurice, and Anderson fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice teaches

such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejection to claim 4.

Regarding claim 5, the Applicants argue that Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice teaches such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejection to claim 5.

Regarding claims 7-8, the Applicants argue that Minakuchi, Webster, Fitzmaurice, and Ano fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice teaches such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejections to claims 7-8.

Regarding claims 32 and 37, the Applicants argue that Minakuchi, Webster, Fitzmaurice, Anderson, and Barbieri fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice

teaches such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejections to claims 32 and 37.

Regarding claims 33 and 38, the Applicants argue that Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Bhatia fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice teaches such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejections to claims 33 and 38.

Regarding claims 34 and 39, the Applicants argue that Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Brook fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice teaches such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejection to claims 34 and 39.

Regarding claims 26-28 and 40, the Applicants argue that Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano fail to teach a feature similar to "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner,

however, respectfully asserts that Fitzmaurice teaches such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejections to claims 26-28 and 40.

Regarding claim 42, the Applicants argue that Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, and Ano fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice teaches such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejection to claim 42.

Regarding claim 43, the Applicants argue that Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Bhatia fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical display surface is convex," as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice teaches such a feature, as is described hereinabove (see the Examiner's response to the Applicants' arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejection to claim 43.

Regarding claim 44, the Applicants argue that Minakuchi, Webster, Fitzmaurice, Anderson, Barbieri, Ano, and Brook fail to teach "simultaneously displaying a second content on an outside surface of a physical spherical display surface of the display, wherein the spherical

display surface is convex,” as is claimed. The Examiner, however, respectfully asserts that Fitzmaurice teaches such a feature, as is described hereinabove (see the Examiner’s response to the Applicants’ arguments concerning claims 1, 2, 6, 9, 10, 11, 30, and 35). Accordingly, the Examiner respectfully maintains the 35 U.S.C. §103 rejection to claim 44.

The Applicants’ arguments filed July 12, 2009 have thus been fully considered, but are not persuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blaine Basom whose telephone number is (571)272-4044. The examiner can normally be reached on Monday through Friday, from 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu Vu can be reached on (571)272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BTB/
1/8/2010

/Kieu Vu/

Supervisory Patent Examiner, Art Unit 2173